



anglianwater

Working with our supply chain to reduce embodied carbon in the products we use. This smaller and lighter plastic air valve has a 93% lower embodied carbon impact against the traditional ductile iron air valves previously used.



# GREENHOUSE GAS EMISSIONS

## ANNUAL REPORT 2011

# OUR UNIQUE ENVIRONMENT



## Storm surge at Cromer on the east coast

Our region is particularly vulnerable to the impacts of more volatile weather: temperature rise, the potential reduction in summer rainfall, lower available water resources, increased flood risk and rising sea levels.

Our region is particularly vulnerable to the impacts of climate change: temperature rise, the potential reduction in summer rainfall, lower available water resources, increased flood risk and rising sea levels.

The ecological sensitivity of many wetland sites in the east of England adds a further challenge. The impact of hotter, drier summers, combined with a growing population, will increase the demand for water. Coastal and low-lying assets face an increased risk of flooding.

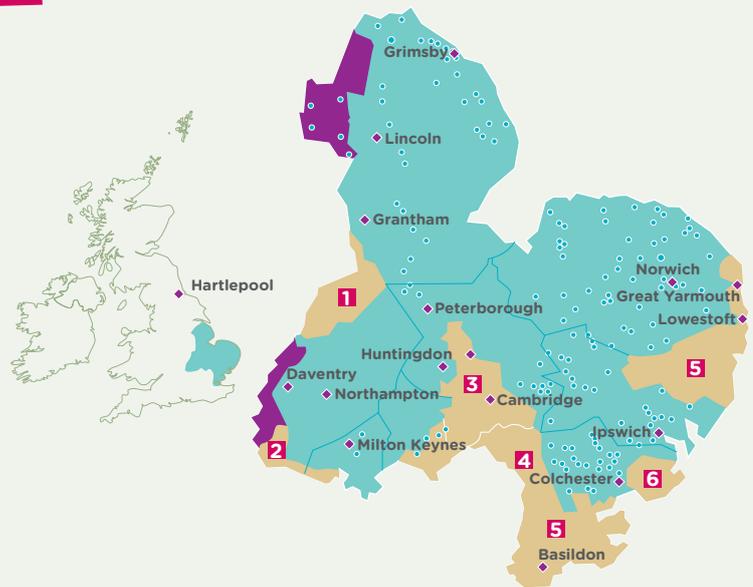
These challenges are a priority, and current actions in the adaptation of our operations include increased flood protection for 20 water sites and resilience enhancement to our water supply network, benefiting over 750,000 customers.

In mitigating our impacts on climate change we are improving our energy efficiency, increasing our understanding of our carbon footprint, investing in renewable energy generation and promoting water efficiency. Over the long term, we are also designing and commissioning more sustainable treatment and delivery systems.

## Supply and services across our region

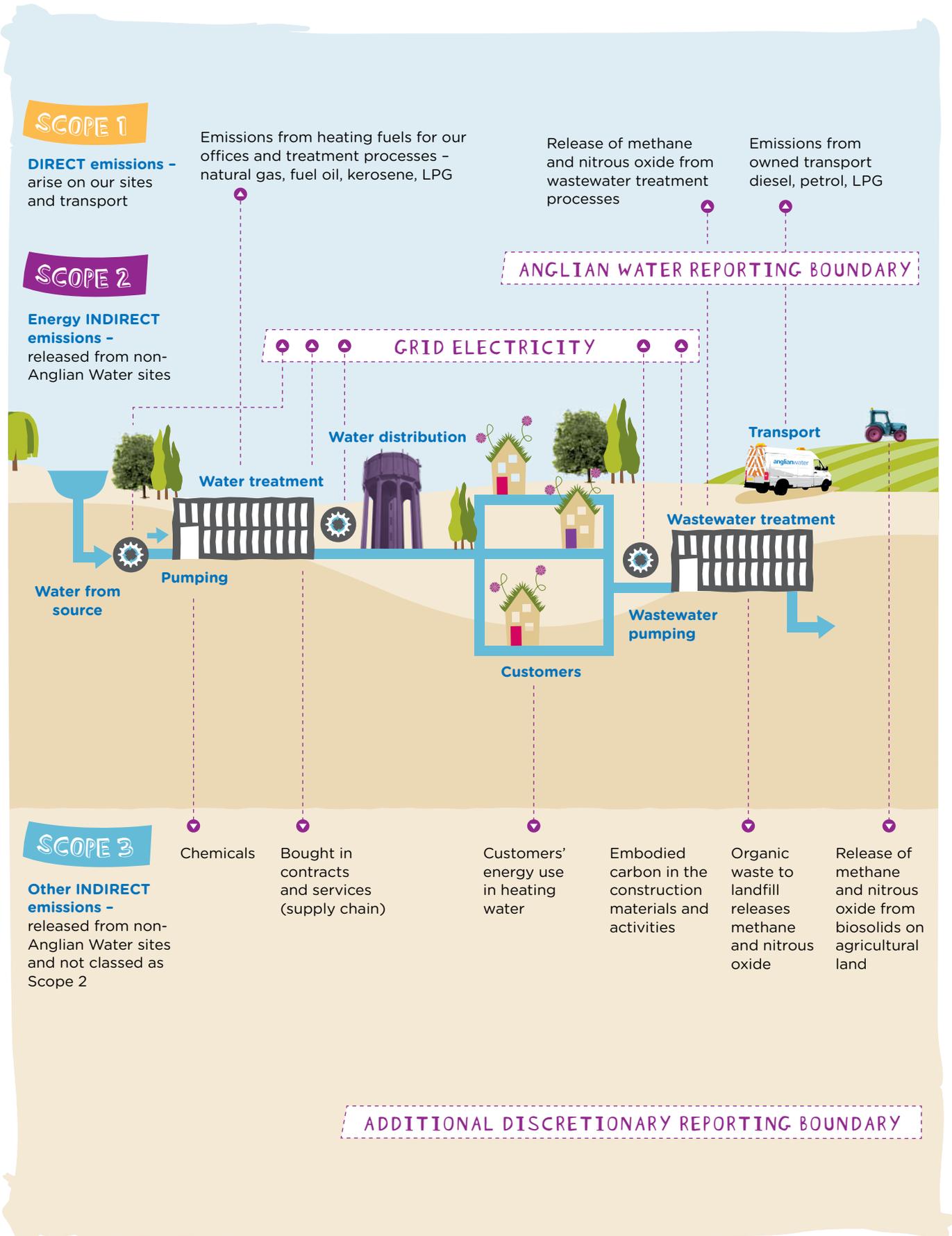
The map shows our sources of supply and the services we and other water companies provide.

- 1 Severn Trent Water
- 2 Thames Water
- 3 Cambridge Water
- 4 Veolia Water Central
- 5 Essex and Suffolk Water
- 6 Veolia Water East
- Water services only
- Wastewater services only
- Water and wastewater services
- Groundwater supply



# OUR APPROACH

We have followed the Defra guidance 2009 on how to measure and report greenhouse gas emissions.



Our mitigation activities have been brought together under 'Drop CO<sub>2</sub>'. Drop CO<sub>2</sub> forms part of our long-term visionary campaign and business strategy 'Love Every Drop'. This communication and behavioural change campaign brings all our stakeholders and customers together to put water at the heart of a new way of sustainable living.



Drop CO<sub>2</sub> drives reductions in carbon emissions and power costs through the above routes.

## Organisational boundary

We have included emissions within the regulated activity of Anglian Water, where we have operational control.

## Reporting period

Our base year is 1 April 2009 – 31 March 2010, which we set using a fixed-base year approach.

## Intensity measurement

We have chosen 'kg of CO<sub>2</sub>e per mega litre' for water supply and wastewater treated as these are common business metrics for our industry sector.

Our intensity measurement for water has remained stable over the previous three years at around 450 kg/CO<sub>2</sub>e per mega litre of water treated and pumped.

Our intensity measurement for wastewater has followed a reducing trend over the last three years with a positive impact through investment in renewable generation.

## Data assurance

The carbon data has been externally verified as part of our regulatory reporting requirements. In 2010, we met the requirements of the CEMARS (Certified Emissions Measurement and Reduction Scheme), having measured greenhouse gas emissions in compliance with ISO 14064-1:2006.

## Carbon offsets

At present, carbon offsets do not form part of our carbon mitigation strategy.

## Green tariffs

The 'green tariff' electricity we have purchased complies with guidance from Ofgem and HM Treasury, however it does not conform to the latest Defra guidance.

# PERFORMANCE

## Operational scopes

We have measured our Scope 1, Scope 2 and significant Scope 3 emissions for business travel and outsourced transport.

**504,026**  
**TONNES** (of CO<sub>2</sub>e)

measurement of greenhouse gas emissions in compliance with ISO 14064.

**39 GWh**  
of renewable generation equating to a 41% increase compared to 2010.

### Greenhouse gas emissions data for period 1 April 2009 to 31 March 2011

	Tonnes of CO <sub>2</sub> e		
	2011	2010	2009
Scope 1	118,050	115,035	109,677
Scope 2	382,037	375,301	385,182
Scope 3	3,939	3,367	3,255
<b>Total annual gross emissions</b>	<b>504,026</b>	<b>493,702</b>	<b>498,115</b>
Exported renewables	3,134	687	319
Green tariff	0	0	0
<b>Total annual net emissions</b>	<b>500,892</b>	<b>493,015</b>	<b>497,796</b>
Kg CO <sub>2</sub> e per Ml water treated	452	448	448
Kg CO <sub>2</sub> e per Ml wastewater treated	781	792	788

	Tonnes of CO <sub>2</sub> e	Specific exclusions
Scope 1		
Gas/fuel oil consumption	37,310	None
Process and fugitive emissions	56,160	None
Owned transport	24,580	None
<b>Total Scope 1</b>	<b>118,050</b>	<b>None</b>
Scope 2		
Purchased electricity	382,037	
<b>Total Scope 2</b>	<b>382,037</b>	
Significant Scope 3		
Business travel	919	None
Outsourced transport	3,020	None
<b>Total significant Scope 3</b>	<b>3,939</b>	We have not included commuting, embodied carbon and emissions from use of water in customers' homes.

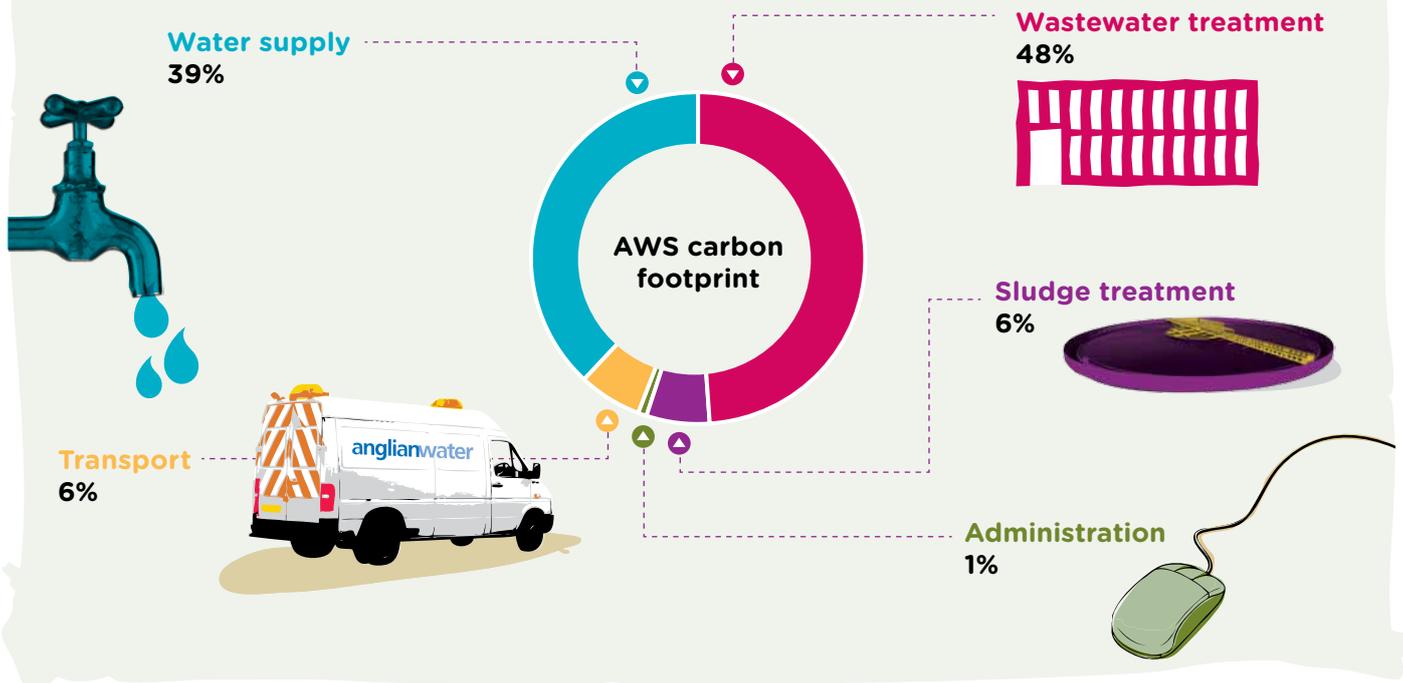
## Change in emissions

Our gross annual carbon emissions have increased by 10,324 t/CO<sub>2</sub>e between 2010 and 2011. Overall emissions have increased in the last financial year due to a significant increase in the volume of water treated and pumped following the harsh winter period.

During 2010/11, as part of our carbon mitigation strategy we saved approximately 12 GWh of electricity (6,500 t/CO<sub>2</sub>e) and generated over 39 GWh of renewable electricity.

The green tariff electricity purchased does not conform to Defra guidance, with a zero impact now recorded. We have re-stated our total annual net emissions and intensity ratio to take account of the Defra guidance for purchased green energy.

## Operational footprint by activity



We recognise that a significant proportion of our carbon emissions (99%) is as a result of the provision of water and wastewater services to our customers. Only 1% of emissions are attributed to administration.

## Targets

Through the period 2010-2015, we are mitigating against pressures on our business with potential increasing GHG emissions through serving a growing population and meeting tighter quality standards. By the end of this five-year period, we will have invested £2.3 billion in maintaining and improving our infrastructure. This investment will result in a forecast 1.5 million t/CO<sub>2</sub>e of embodied carbon in the materials we use to build and replace assets. These new assets will also add an additional 45,000 t/CO<sub>2</sub>e of annual operational carbon emissions in 2015.

With a continued focus on energy management, innovation in design and commissioning of new generation assets, we have set a challenging objective of mitigating against future potential increases in operational carbon emissions. We have also targeted to halve the embodied carbon of assets we design and build in 2015 against similar assets we built prior to 2010.

### Medium-term target

Our medium-term target is to reduce our operational carbon emissions by 10% in real terms by 2015 from a 2010 baseline. We also expect to report a reduction in gross emissions during this period in line with a decreasing grid electricity emissions factor as forecast by Defra.

### Long-term target

Our long-term aspiration is to reduce our total annual GHG emissions by 50% from a 2010 baseline by 2035. This assumes successful implementation of the Government's low carbon transition plan (2009).

Responsibility for achieving these carbon targets lies at Board level with Chris Newsome, Asset Management Director and Paul Gibbs, Director of Wastewater.

## Contacts

For further information on GHG emissions within Anglian Water, please contact our carbon manager David Riley:

### Email us

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## Company information

Anglian Water Services is a public limited company, incorporated in the UK.

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